SONY®

VIDEO CAMERA KIT VCK-2400

Owner's Instruction Manual

VIDEO
CAMERA KIT

VCK-2400

READ THIS INSTRUCTION MANUAL BEFORE OPERATING YOUR SONY VIDEO CAMERA

Your SONY Video Camera, DVC-2400, represents an outstanding engineering achievement. High-quality optics, the latest in solid state technology, and careful craftsmanship have been combined to produce a miniature TV camera that is completely portable. Connect this camera to the SONY DV-2400 Videocorder, and you can tape live action wherever you go.

ON-THE-SPOT RECORDINGS

Housed in a compact, handy case, the 5 lb 9 oz DVC-2400 permits all the freedom of action that was formerly found only in film cameras. When the camera is plugged into the portable Videocorder, which is carried by means of a shoulder strap, the operator forms a completely mobile and automatic video recording center.

FULLY AUTOMATIC

Recording operations have been reduced to a simple point-and-shoot procedure. A carefully engineered Automatic Sensitivity Control System regulates camera sensitivity to suit a wide range of lighting conditions (indoor, 300 lux to bright outdoors, 100,000 lux). In addition, audio recording levels are automatically maintained in the recorder despite wide differences in the sound levels picked up by the microphone.

PICTURE-PERFECT

Crisp high-resolution pictures are assured by a special frequency compensation system in the video circuits. You need only adjust optical focus, framing and zoom to obtain perfect pictures every time. The solid state circuitry, composed of 40 SONY transistors and 19 diodes, has been designed for rugged, continuous use. The camera will provide remarkably stable performance and long operating life if you follow the few simple rules to protect the vidicon, as given at the end of this booklet.

OPERATING FEATURES

Electronic Viewfinder.....The built in viewfinder shows you the actual TV picture that the camera produces. It assures accurate framing, precise focusing, and parallax-free shooting.

Remote Control.....Press the trigger on the handgrip to start the tape (begin recording). Release the trigger to stop the tape.

Manual Zoom.....The zoom lens supplied with the camera permits you to change from wide-angle (16 mm) to telephoto (64 mm) in one continuous motion.

Microphone.....The high-quality unidirectional microphone mounts atop the camera to pick up the sound from the televised subject.

FOR STATIONARY SHOOTING

In those cases where extreme freedom of movement is not needed, the camera may be attached to the monopod or tripod, which are available as optional accessories.

The camera may also be used to supply signals directly to a SONY Series CV-2000 Videocorder*. In this case, a special adaptor Model CMA-1 is required.

*All units with model numbers in the 2000 series.

TABLE OF CONTENTS

Location of parts and controls 3
To assemble video camera kit 4
Operation and adjustments 5
- Recording procedure
- Remote control trigger and button
- Lens opening ring
- Focus ring
- Zoom ring
- Viewfinder
- Microphone

To attach the camera to the monopod or the tripod 7
To use the DVC-2400 Camera with the SONY CV-2000 Series Videocorder 8
Precautions to protect the vidicon 9
Specifications 10
Recommended accessories 10

IMPORTANT POINTS TO REMEMBER

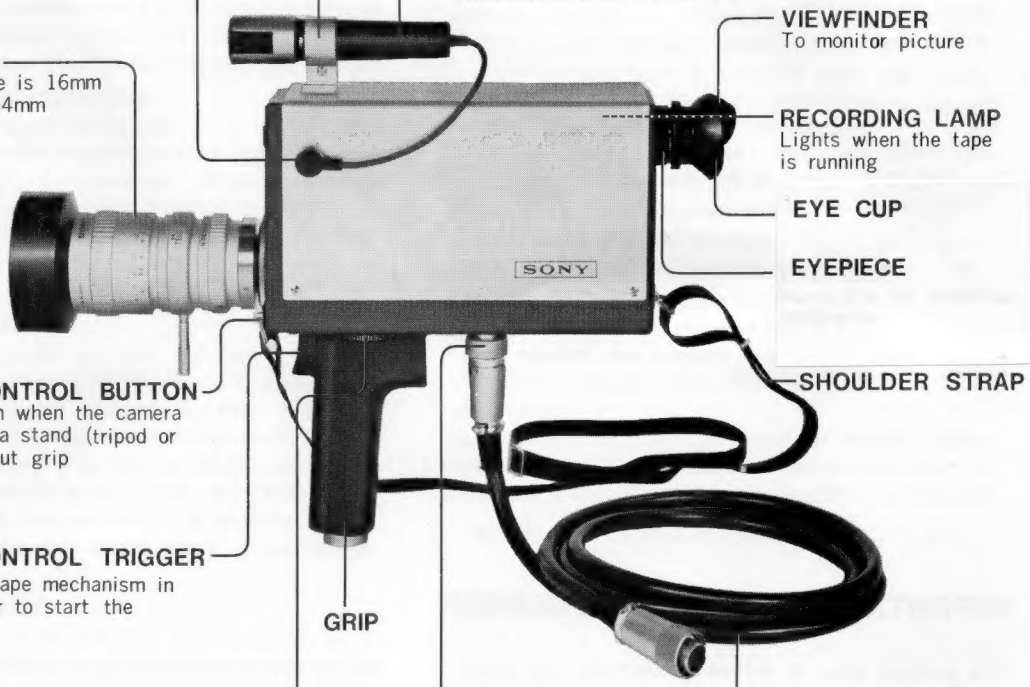
The vidicon tube is extremely delicate and sensitive. Therefore, try to avoid rough handling or mechanical shock to the camera. The vidicon is also very sensitive to magnetic fields; never put the camera on a television receiver or near any magnetic field (large motors, transformers, etc.) because the picture may become distorted or blurred.

Avoid continuous shooting of subject in strong light, especially when the picture has high contrast. If the camera is used for a long time in this way, the sensitivity of the vidicon tube may decrease or it may burn out.

When the camera is not in use, be sure to turn off the camera and put the lens cap in place. Keep the camera in a horizontal plane whenever possible.

To protect the vidicon, do not carry the camera with its lens pointing downwards.

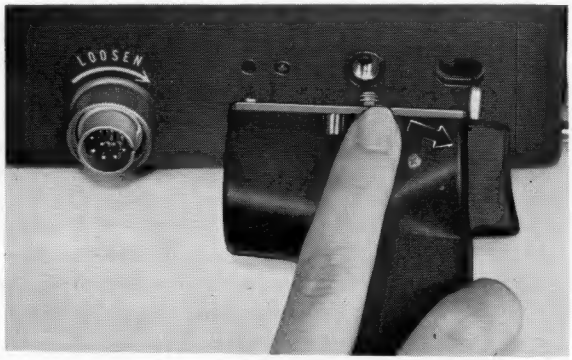
LOCATION OF PARTS AND CONTROLS



TO ASSEMBLE VIDEO CAMERA KIT

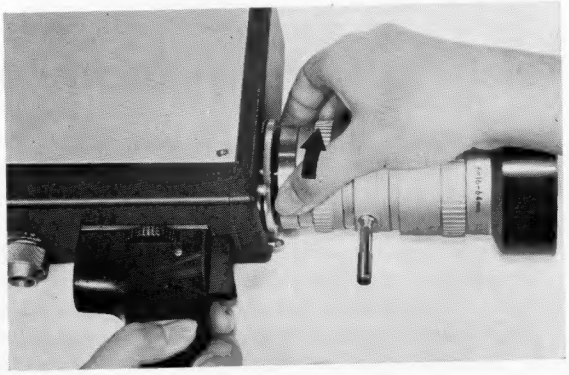
Grip

Insert the guide pins of the grip into the slots of the camera; turn the knurled LOCK SCREW clockwise until the grip is firmly locked into place.



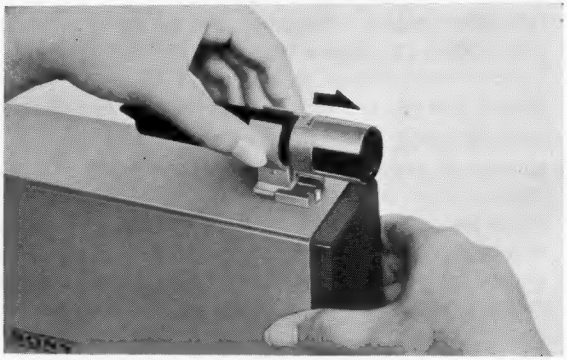
Lens

Insert the zoom lens (supplied) into the LENS MOUNT and turn it clockwise until snug by holding the base of the lens.



Microphone

Slide the microphone holder into the MICROPHONE SHOE, and insert the microphone plug into the MICROPHONE JACK.

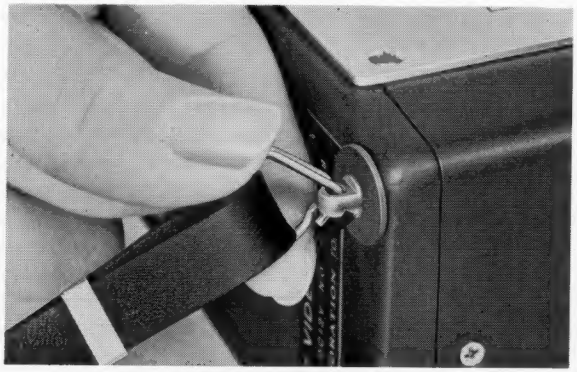


Eye cup

Attach the rubber eye cup to the groove of the eye piece.

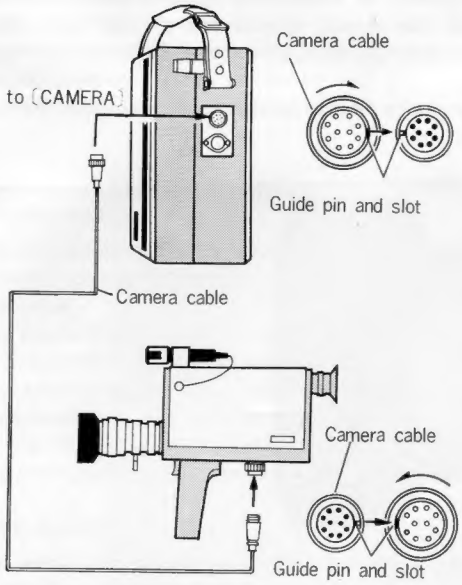
Shoulder strap

Attach the washer (supplied) on the strap hunger so that the flat portion of the washer faces outside, and hung the shoulder strap as shown.



Camera cable

Insert the 10-hole connector of the camera cable into the VIDEOCORDER CONNECTOR. Mate the guide pin of the cable connector to the slot of the receptacle and turn the locking collar of the connector counterclockwise until the cable is firmly locked into place.
Connect the other end of the cable (10-pin) to the Videocorder DV-2400 in the same way.
Camera cable can be extended up to 33 ft with the use of optional camera extension cables.

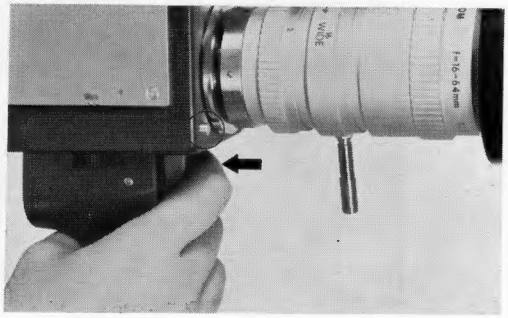


Recording Procedure

1. Set the FUNCTION LEVER of the Videocorder to the STANDBY position. This turns on the Videocorder and the camera.
2. Remove the lens cap and point the camera at the subject. Adjust the LENS OPENING RING and FOCUS RING while watching the Viewfinder. Pictures will appear on the Viewfinder approx. 20 seconds after turning on the camera.
3. Obtain a clear, sharp picture on the Viewfinder, then start recording by pressing the START BUTTON on the Videocorder. The RECORDING LAMP will light showing that the tape is running. Monitor sound from the microphone by plugging the earphone into the jack marked "EAR" on the Videocorder.
   To record pictures without sound, disconnect the microphone.

Remoto Control Trigger and Button

Tape motion can be controlled at the camera by pressing the REMOTE CONTROL TRIGGER on the camera grip, when the FUNCTION LEVER on the Videocorder is in the STANDBY position.
Press the trigger to start tape motion.
When you use the camera on the monopod or the tripod (optional), press the REMOTE CONTROL BUTTON located at the side of the LENS MOUNT.



Lens Opening Ring

The Automatic Electric Sensitivity Control System of this Video Camera permits operation over a wide range of lighting conditions, from indoor lighting (300 lux) to outdoor daylight (100,000 lux).

In most cases the lens should be wide open (F 2). However, by setting the optimum lens opening to suit lighting conditions, best picture quality will be assured.

A simple guide for lens opening is as follows:

For indoor shots: (normal artificial illumination) set the LENS OPENING RING to F 2

For outdoor shots: (cloudy or shade) set to 4~5.6
(bright scene) set to 8~11

Further precise adjustments should be performed by watching the Viewfinder screen. The use of a smaller lens opening (higher F number) is also helpful in prologing the life of the vidicon tube.

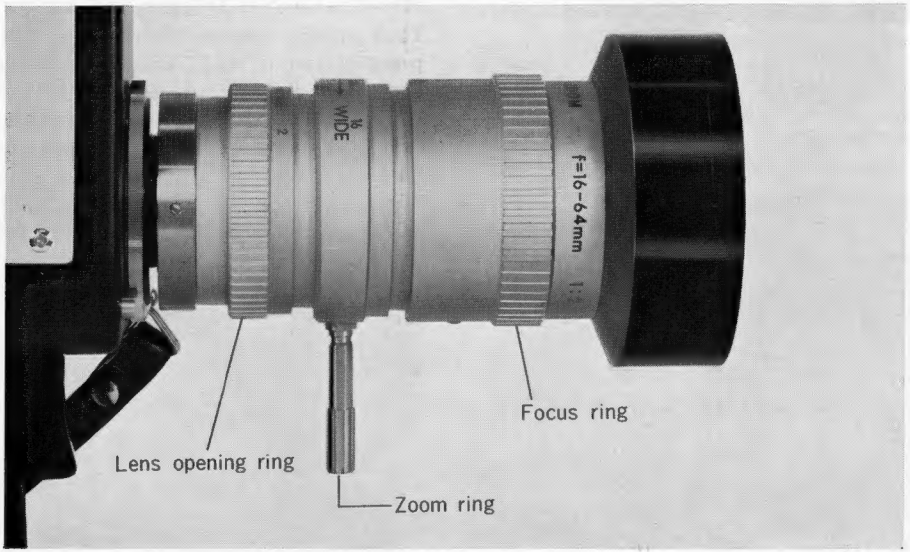
Focus Ring

Estimate the distance from the lens to the subject, turn the FOCUS RING and set the distance (feet) to the black line on the lens tube.

Precise focus adjustments should be performed as you watch the Viewfinder screen.

Zoom Ring

The zoom lens puts professional results into your productions. It moves the image closer or further away on the screen, as you desire. Set your stage for a wide-angle shot, then close up on the point of interest. The lens travels its full range from 16mm wide-angle to 64 mm telephoto with smooth manual action.



Viewfinder

The built-in Viewfinder permits direct monitoring of the camera's output. It will assure accurate framing, precise focusing and parallax-free shooting.
When the FUNCTION LEVER on the Videocorder is set to the STANDBY position, the picture appears on the Viewfinder screen. Therefore, prior to recording set your stage and adjust lens settings (LENS OPENING RING, FOCUS RING) precisely while watching the Viewfinder screen. Don't start the tape until the picture is satisfactory. When the START BUTTON on the Videocorder is pressed, or if the REMOTE CONTROL TRIGGER (or REMOTE CONTROL BUTTON) on the camera is pressed, the red RECORDING LAMP in the Viewfinder will light, showing that recording is in progress.

Microphone

The microphone F-45A (supplied) is unidirectional. It picks up sound mostly from the front of the microphone.
The sound from the microphone can be monitored by connecting the earphone to the Videocorder.
The MICROPHONE JACK accepts any high-quality low-impedance microphone.
To use the microphone apart from the camera, use the microphone extension cord (supplied).

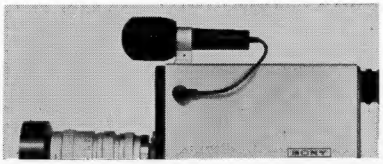
Wind Screen

For use in outdoor applications on a windy day, the supplied wind screen will prevent the wind noise.
When attaching the wind screen, allow a little space before the microphone; insert the microphone fully into the screen then pull the screen slightly forward until the rear edge of the screen stops.

TO ATTACH THE CAMERA TO THE MONOPOD OR THE TRIPOD

It is advisable to mount the camera on a camera stand (tripod or monopod) in those instances where the camera is to be operated in fixed or semi-fixed locations. This improves picture steadiness over that obtainable with the hand-held camera. The monopod, a single rod, allows almost as much freedom of movement as the hand-held camera, but provides a good steady rest when needed.

- To mount the camera on a tripod camera stand, be sure to fasten the mounting screw of the stand to the mounting slot of the camera. In this case use the REMOTE CONTROL BUTTON to start and stop recordings.
  When the lengh of the mounting screw of the tripod does not fit the mounting slot of the camera, attach the rubber spacer (supplied) on the tripod head.
- The SONY monopod VCT-1 and VCT-2 (with rest belt) can be attached to the camera grip directly.



TO USE THE DVC-2400 CAMERA WITH THE SONY CV-2000 SERIES VIDEOCORDER

Although the DVC-2400 Camera has been designed to work with the portable Videocorder, it may also be used with any SONY Series CV-2000 Videocorder*. However, the optional Camera Adaptor, Model CMA-1, is required to mate the DVC-2400 Camera to the Series CV-2000 Videocorder.

* All units with model numbers in the 2000 series.

PRECAUTIONS TO PROTECT THE VIDICON

The vidicon tube, which converts the optical image into electrical signals, is very delicate and sensitive. Follow these precautions to ensure top performance and long operating life.

The light-sensitive surface of the vidicon tube may be damaged if the camera is pointed at a brightly-illuminated subject for an extended period of time. In such cases, an image may be burned into vidicon that will appear in the picture after the camera has been pointed to another scene. Therefore, avoid shooting scenes in very bright illumination with the lens wide open (F 2). If the camera is pointed at a bright subject, pan the camera from side to side occasionally, so that the image on the vidicon does not remain fixed. Never point the camera directly at the sun or other source of bright light.

How to check for Vidicon burn

1. Point the operating camera at a uniformly-lighted, but blank scene using a lens opening of 16 (heighest F number). You may use a large white sheet of paper illuminated with approx. 600 lux, or point the camera at a bright-blue cloudless sky (never at the sun).
2. Vidicon burn will be indicated if a dark, indistinct image appears on the screen of the Viewfinder.

Treatment for light damaged vidicons

A severe exposure of the target area of the vidicon might necessitate replacement of the vidicon. However, superficial target burns can often be remedied by the following treatment.

a. Put the lens cap in place and let the camera remain inoperative for 1 or 2 days. Check for burn, as indicated earlier. If the effects of the burn persist, try the next step.

b. Point the operating camera at the same scene described in Step 1 above for two to three hours using a lens opening of F 2.
   Check to see if the burn has been eliminated by setting the lens opening to 16. If the dark image no longer appears on the screen of the viewfinder, the camera may be returned to regular use.

Avoid unnecessary exposure to light

Remember that the vidicon is light sensitive even when the camera has been turned off. Therefore, keep the lens cap in place whenever the camera is not being used.

If vidicon replacement is indicated, or if there are any questions about performance, contact the nearest Authorized SONY Service Station.

SPECIFICATIONS

Video Camera: DVC-2400
Vidicon tube: 2/3″ Separate mesh vidicon
Transistors: 40
Diodes: 21
Scanning system: 2:1 interlace
Horizontal and Vertical synchronizing signals supplied by the DV-2400 Videocorder.
(To use the camera with the SONY CV-2000 Series Videocorder the CMA-1 Adaptor is required).
Horizontal resolution: more than 400 lines (camera alone)
Horizontal frequency: 15.75 kHz
Vertical frequency: 60 Hz
Signal-to-noise ratio: greater than 40 db
Video output: 1vp-p Composite Video signal (at load impedance 50 Ω)
Automatic-sensitivity control range: 300 lux to 100,000 lux (with F 2 lens)
Lens: Zoom lens, f 16~64 mm, F 2, C mount
Viewfinder: (built-in electronic viewfinder)
1″ picture tube (measured diagonally)
Microphone input jack: Mini jack
Power requirements: DC 12 V supplied by the DV-2400 (with a CV-2000 Series Videocorder, power is supplied through the Portable Camera Adaptor CMA-1)
Dimensions: 2-13/16 (w)×5 (h)×15-1/16 (d)″ (with supplied zoom lens)
Weight: 5 lbs. 9 oz. (with supplied zoom lens, grip, microphone)
Microphone: Unidirectional, Impedance 250 Ω

Video Camera Kit VCK-2400 includes:

Video Camera DVC-2400
Television Zoom Lens VCL-16
Microphone F-45A
Microphone extension cord
Camera grip
Camera cable CCJ-1
Wind screen
Polishing cloth
Shoulder strap

Hz (hertz): cycles per second

Design and specifications subject to change without notice.

RECOMMENDED ACCESSORIES

TRIPOD

Provides a stationary mount for the camera.

MONOPOD VCT-1, VCT-2

Provides a handy steady-rest for the camera when complete mobility must be retained.
VCT-1 is a telescoping pod. VCT-2 is a telescoping type and has a belt for rest.

CAMERA ADAPTOR CMA-1

Permits the DVC-2400 camera to be used with any SONY Series CV-2000 Videocorder.

CAMERA EXTENSION CABLES

CCJ-1 (5 ft.)
CCJ-5 (16 ft.)
CCJ-10 (33 ft.)

MICROPHONE EXTENSION CORDS

EC-10M (33 ft)
EC-25M (82 ft)

SONY CORPORATION

35
3-790-625-■ (1)